R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

RE: THE CLAIMS

Claims 1-13 have been canceled, and claims 14-17 have been added to more clearly recite the distinguishing features of the present invention, based on the subject matter of (now canceled) original claims 8, 10, 11 and 13.

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered.

RE: THE PRIOR ART REJECTION

Claims 1 and 6 were rejected under 35 USC 102 as being anticipated by USP 6,005,506 (“Bazarjani et al”), claims 2-5, 7, and 11 were rejected under 35 USC 103 as being obvious in view of the combination of Bazarjani et al and USP 6,389,059 (“Smith et al”), claims 8 and 12 were rejected under 35 USC 103 as being obvious in view of the combination of Bazarjani et al and USP 6,370,365 (“Callaway, Jr. et al”), and claims 9, 10, and 13 were rejected under 35 USC 103 as being obvious in view of the combination of Bazarjani et al, Callaway, Jr. et al, and Smith et

al. These rejections, however, are respectfully traversed with respect to new claims 14-17 set forth hereinabove.

According to the present invention as recited in new independent claim 14, a radio wave reception device comprises a radio wave reception unit which is capable of receiving arbitrary radio wave signals having different frequencies, and which converts a received arbitrary radio wave signal into an electric signal and outputs the electric signal. In a similar manner, according to the present invention as recited in new independent claim 16, a radio wave reception device comprises a radio wave reception unit which is capable of receiving arbitrary radio waves having different frequencies, and which outputs a received arbitrary radio wave by converting the received arbitrary radio wave into an electric signal. And according to the present invention as recited in new independent claim 17, a radio wave clock is provided which comprises a radio wave reception device, wherein the radio wave reception device includes a radio wave reception unit which is capable of receiving arbitrary radio waves that contain time data and that have different frequencies, wherein the radio wave reception unit outputs a received arbitrary radio wave by converting the received arbitrary radio wave into an electric signal.

Significantly, according to the present invention as recited in new independent claim 14, the radio wave reception device

comprises an oscillation unit which includes a frequency determining section which determines a frequency f0 in accordance with an equation:

$$(|f1 \pm fi|/p1) = \ldots = (|fn \pm fi|/pn) = f0$$

where p1, ..., pn are positive integers and n is an integer equal to or greater than 2, and wherein the equation defines a relationship between the respective frequencies f1, ..., fn of the arbitrary radio wave signals receivable by the radio wave reception unit and an intermediate frequency fi. The oscillation unit outputs a signal having the frequency f0.

Similarly, according to new independent claims 16 and 17, an oscillation unit is provided which outputs a signal having a frequency f0 which is obtained from an equation:

$$(|f1 \pm fi|/p1) = \ldots = (|fn \pm fi|/pn) = f0$$

where p1, ..., pn are positive integers and n is an integer equal to or greater than 2, and wherein the equation defines a relationship between the respective frequencies f1, ... , fn of the arbitrary radio waves receivable by the radio wave reception unit and an intermediate frequency fi.

Thus, according to the present invention, <u>arbitrary</u> radio waves having <u>different</u> frequencies (f1, ... , fn) are receivable by the radio wave reception unit, and based on the frequencies f1 through fn, a frequency f0 and an intermediate frequency fi can

be obtained using oscillation unit and equation recited in new independent claims 14, 16 and 17, whereby

$$(|f1 \pm fi|/p1) = \ldots = (|fn \pm fi|/pn) = f0.$$

As further recited in claim 14, the oscillation unit outputs a signal having the frequency f0, and a multiplying unit multiplies the signal having the frequency f0 output from the oscillation unit (e.g., multiplies the signal by one of the values p1...pn as recited in claim 15). And a frequency conversion unit synthesizes the electric signal output from the radio wave reception unit with the signal output from the multiplying unit, and outputs the signal having the intermediate frequency fi which has a fixed value that is the same for all of the arbitrary radio wave signals receivable by the radio wave reception unit.

On the other hand, as recited in claims 16 and 17, which do not recite a multiplying unit, a frequency conversion unit synthesizes the electric signal output from the radio wave reception unit with a harmonic component of the signal having the frequency f0 output from the oscillation unit, and outputs the signal having the intermediate frequency fi.

And according to the present invention as recited in new independent claims 14, 16 and 17, a detection unit demodulates the signal having the intermediate frequency fi output from the frequency conversion unit.

With this structure, by setting the local oscillation frequency f0 and the intermediate frequency fi using the equation recited in the new independent claims, a radio wave reception device can be provided that can receive a plurality of arbitrary radio waves having different frequencies, as recited in new independent claims 14, 16 and 17. That is, with the structure of the claimed present invention, a plurality of arbitrary waves having difference frequencies can be received, and an electric signal corresponding to a received arbitrary radio wave is synthesized with a signal obtained by multiplying the signal having the frequency f0 (claim 14) or with a harmonic component of the signal having the frequency f0 (claims 16 and 17) and a signal having the intermediate frequency fi (satisfying the equation recited in the claims) is output. Then the signal having the intermediate frequency fi is demodulated to obtain, for example, a standard time code.

Accordingly, since the frequency f0 and the intermediate frequency fi are set in accordance with the equation recited in new independent claims 14, 16 and 17, the structure of the present invention eliminates the need for a complicated circuit that changes the frequency of the signal output by the oscillation unit depending on the frequency of the received radio wave, thereby enabling a reduction in circuit area and costs.

It is respectfully submitted that the prior art of record does not disclose, teach or suggest the features of the present invention as recited in new independent claims 14, 16 and 17.

Bazarjani et al discloses a receiver which mixes a radio wave signal received by an antenna with a signal output by an oscillator and which supplies a signal having a downconverted frequency. Smith et al, moreover, discloses a communication system which outputs a signal having a frequency obtained from an average of two frequencies of two input signals. And Callaway, Jr. et al discloses a selective call radio which outputs both a received radio wave signal filtered by selectivity filter and a signal generated by a divider to a mixer. According to Callaway, Jr. et al, ACIPR (Adjacent Channel Interference Protection Ratio) of a receiver providing the divider which is integrated into an IC could be similar to that of a conventional receiver designed with discrete local oscillator components.

It is respectfully submitted, however, that none of the cited references disclose, teach or suggest the features of the present invention as recited in new independent claims 14, 16 and 17 as explained hereinabove.

In view of the foregoing, it is respectfully submitted that the present invention as recited in claims 14, 16, and 17 and claim 15 depending from claim 14 clearly patentably distinguish over Bazarjani et al, Callaway, Jr. et al, and Smith et al, taken

singly or in combination, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

/Douglas Holtz/

Douglas Holtz
Reg. No. 33,902

Frishauf, Holtz, Goodman & Chick, P.C.
220 Fifth Avenue - 16th Floor
New York, New York 10001-7708
Tel. No. (212) 319-4900
Fax No. (212) 319-5101

DH:jd/iv